SYSTEM AND METHOD FOR ROUTER DATA AGGREGATION AND DELIVERY

ABSTRACT OF THE DISCLOSURE

A chunk format for a large-scale, high data throughput router includes a preamble that allows each individual chunk to have clock and data recovery performed before the chunk data is retrieved. The format includes a chunk header that contains information specific to the entire chunk. A chunk according to the present format can contain multiple packet segments, with each segment having its own packet header for packet-specific information. The format provides for a scrambler seed which allows scrambling the data to achieve a favorable zero and one balance as well as minimal run lengths. There can be a random choice of available scrambler seeds for any particular chunk to avoid malicious forcing of zero and one patterns or run lengths of bit zeroes and ones. There are a chunk cyclical redundancy check (CRC) as well as forward error correction (FEC) bytes to detect and/or correct any errors and also to insure a high degree of data and control integrity. Advantageously, a framing symbol inserted into the chunk format itself allows the receiving circuitry to identify or locate a particular chunk format. "Break Bytes" and "Make Bytes" fields located at the beginning of a chunk preamble precondition an optical receiver to a proper state before the actual chunk arrives at the receiver.

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